

LISTING OF CLAIMS

1. (Currently amended) A drive circuit for a lamp comprising:
an electronic switch connected in series with a lamp and a source of DC voltage and
having a control input terminal, and
a pulse-width-modulation (PWM) control circuit having an input connectable to the
source of DC voltage and an output connected to the control input terminal of the electronic
switch for varying lamp brightness in proportion to the PWM duty cycle,
the control circuit including a temperature-sensing circuit for reducing the PWM duty
cycle when lamp temperature exceeds a predetermined temperature.
2. (Currently amended) The drive circuit of claim 1, wherein the control circuit
includes a timing circuit and the ~~temperature-responsive~~ temperature-sensing circuit includes
circuitry for altering impedance of the timing circuit.
3. (Currently amended) The drive circuit of claim 2, wherein the timing circuit
includes an RC circuit and the impedance altered by the ~~temperature-responsive~~ temperature-
sensing circuit is in a capacitance discharge circuit.
4. (Original) The drive circuit of claim 2, wherein the circuitry for altering
impedance includes two resistances connected in parallel and a thermal switch in series with one
of the resistances.
5. (Original) The drive circuit of claim 4, wherein the control circuit includes a
selectively operable brightness control switch connected in series with the thermal switch.
6. (Original) The drive circuit of claim 1, and further comprising adjustment
circuitry for automatically adjusting a control voltage of the control circuit in response to a
change in the voltage of the source.

7. (Original) The drive circuit of claim 6, wherein the adjustment circuitry includes a supply voltage-dependent voltage regulator for maintaining a constant operating voltage for the control circuit irrespective of the voltage of the source.

8. (Currently amended) A portable spotlight comprising:
a lamp; and
a drive circuit connected to the lamp, the drive circuit including
an electronic switch connected in series with a lamp and a source of DC voltage and
having a control input terminal, and
a pulse-width-modulation (PWM) control circuit having an input connectable to the
source of DC voltage and an output connected to the control input terminal of the electronic
switch for varying lamp brightness in proportion to the PWM duty cycle,
the control circuit including a temperature-sensing circuit for reducing the PWM duty
cycle when lamp temperature exceeds a predetermined temperature.

9. (Currently amended) The spotlight of claim 8, wherein the control circuit
includes a timing circuit having two resistances connected in parallel, the ~~temperature-responsive~~
temperature-sensing circuit including a thermal switch connected in series with one of the
resistances.

10. (Original) The spotlight of claim 9, and further comprising a selectively operable
brightness control switch connected in series with the thermal switch.

11. (Currently amended) The spotlight of claim 8, wherein the ~~temperature-~~
~~responsive~~ temperature-sensing circuit includes a thermal switch.

12. (Currently amended) The spotlight of claim 8, wherein the control circuit includes
an integrated circuit timer configured as ~~and~~ an astable multivibrator.

13. (Original) A method of protecting a lamp circuit from overheating comprising:
pulse-width-modulating a supply voltage for controlling lamp brightness,
sensing lamp circuit temperature, and
reducing the duty cycle of pulse width modulation in response to a sensed temperature
exceeding a predetermined temperature.
14. (Original) The method of claim 13, wherein the pulse-width-modulating includes
connecting an electronic switch in series with the lamp and pulse-width-modulating a signal at a
control terminal of the switch.
15. (Original) The method of claim 13, wherein the reducing includes altering a
resistance in a timing circuit.
16. (Original) The method of claim 15, wherein the altering includes disconnecting
one of two parallel-connected resistors.
17. (Original) The method of claim 13 and further comprising automatically
adjusting the duty cycle of pulse width modulation in response to changes in the supply voltage.
18. (Currently amended) A drive circuit for a lamp comprising:
electronic switch means connected to a lamp for controlling current flow through the
lamp from a DC source and having a control input terminal, and
control means connected to the control input terminal of the switch means for pulse-
width-modulation (PWM) of the switch means for varying lamp brightness in proportion to
PWM duty cycle,
the control means including temperature-responsive means for reducing the PWM duty
cycle when lamp temperature exceeds a predetermined temperature.

19. (Original) The drive circuit of claim 18, wherein the temperature-responsive means includes thermal switch means.

20. (Original) The drive circuit of claim 18, wherein the control means includes selectively operable brightness selection means.

21. (Currently amended) The drive circuit of claim 18, and further comprising adjustment means coupled to-a the control means for automatically adjusting the control voltage in response to changes in the voltage of the DC source.